



Warrior Individual Cooling System (WICS)

Overview:

The WICS is a lightweight, man-portable, liquid circulating microclimate cooling system, designed to provide heat stress relief to Soldiers encapsulated in the Future Force Warrior (FFW) Chemical/Biological (CB) ensemble in hot environments.

Description:

The WICS is a vapor compression cycle cooler which pumps a chilled fluid through a tube-type heat transfer garment. Metabolic heat is transferred, by conduction, from the Soldier to the chilled circulating fluid in the tubing network, and rejected to the ambient environment via the WICS' condenser.

Specifications:

- **Cooling Power:** 120 Watts in a 95° F environment
- **Electrical Power Consumption:** <50 watts (24 Volts DC/2 Amps)
- **Weight:** 3.5 pounds (excluding power source)
- **Volume:** 1.5 liters (~11.2 cm dia x 15.2 cm)
- **Coolant Fluid Temperature:** 77° F
- **Refrigerant:** R134A
- **Cylindrical Design**

Status:

The Warrior Individual Microclimate Cooling System is being developed under a phase two Small Business Innovative Research (SBIR) Program by Rini Technologies, Inc. This system will represent a 48% reduction in volume compared to the previous state-of-the-art, portable, microclimate cooling system. A fully functional prototype is expected in May 2006.

Point of Contact:

Individual Protection Liaison

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